

**AMENDMENTS TO THE CLAIMS**

1. (Canceled)

2. (Currently Amended) The instrument of claim 11—1, wherein said instrument includes both said VDD and said AudDD, and wherein said reconstructing means ~~DTV circuitry~~ is operable to reconstruct and to display both of said video stream on said VDD and said audio stream on said AudDD.

3. (Cancelled)

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4. (Currently Amended) The instrument of claim 11—1, further comprising:

means for recording circuitry ~~(R) to record~~ said live DTV stream ~~signal~~.

5. (Cancel)

6. (Currently Amended) The instrument of claim 11—1, further comprising: including

measuring means for circuitry ~~(VSB) to quantitatively monitoring~~ at least one metric of the analog signal quality of the ~~a~~ live DTV signal.

7. (Currently Amended) An integrated digital television (DTV) diagnostic instrument comprising:

at least one of a video display device (VDD) and an audio display device (AudDD);

DTV means for receiving a live DTV signal, reconstructing at least one of a video stream and an audio stream from said DTV signal, and displaying at least one of said video stream and said audio stream on said VDD or said AudDD, respectively;

monitoring means, responsive to said DTV circuitry, for monitoring digital properties of a live DTV signal; and

measurement means for quantitatively monitoring at least one metric of the quality of a live DTV signal,

wherein said measurement means is operable to display at least one of the following:

a first graph of a carrier to noise ratio of said DTV signal at an input to a vestigial side band ~~(VSB)~~ decoder,

a second graph of a packet error count, and

a third graph ~~a plot~~ of equalizer tap coefficients.

8. (Currently Amended) The instrument of claim 26, further comprising:

means for recording circuitry (R) ~~to record~~ said DTV signal;

~~wherein said instrument has one of the following sets of features:~~

~~VSB, AV, AN and R;~~

~~VSB, AV, M and R; and~~

~~VSB, AV, M, AN and R.~~

9. (Cancelled)

10. (Currently Amended) The instrument of claim 11-1, wherein at least a part of said instrument is monitoring circuitry and said analysis circuitry are embodied by a processor running software.

11. (Currently Amended) An integrated digital television (DTV) diagnostic instrument comprising:

at least one of a video display device (VDD) and an audio display device (AudDD);

means for performing at least one of extracting a live DTV stream from a live DTV signal and reading a recorded DTV stream from a storage device;

means for reconstructing at least one of a video stream and an audio stream from said live or recorded DTV stream, and to display at least one of said video stream and said audio stream on said VDD or said AudDD, respectively; and

an analysis component to examine and determine digital properties of a DTV stream,

~~The instrument of claim 1, wherein said monitoring circuitry~~ analysis component is operable upon at least one of said live DTV stream and said recorded DTV stream ~~a live signal from said DTV circuitry~~ to do at least one of the following for each said DTV stream:

check for correct syntax of MPEG-2 transport packets;

determine existence, syntax, consistency, and frequency of at least one of MPEG-2 System tables and ATSC PSIP tables;

determine percentage of transport stream used by various data types, channels, and elementary streams; and

determine transmission frequency of the Program Clock References (PCRs)

~~generate alarms upon occurrences of errors and upon exceeding specified thresholds; and~~

~~trigger a recording upon occurrences of errors and upon exceeding specified thresholds.~~

12. (Cancelled)

13. (Currently Amended) The instrument of claim 11-1, wherein said analysis component ~~analysis circuitry~~ is operable upon ~~a~~ said recorded DTV stream to further do at least one of:

drill down into the contents of individual MPEG-2 transport packets; and

present a visualization of the individual MPEG-2 transport packets in the broadcast stream.

14. (Cancelled)

15. (Currently Amended) The instrument of claim 11-1, further comprising means for a controller operable to displaying pointing-device-clickable buttons on said VDD that are used to invoke functionalities of said instrument monitoring circuitry and said analysis circuitry.

16. (Currently Amended) The instrument of claim 15, wherein said displaying means-controller is embodied by a processor running software.

17. (Original) The instrument of claim 15, wherein said buttons are arranged on said VDD in order of a coarsest level of information granularity to a finest level of information granularity such that the arrangement takes advantage of a user's tendency to progress from using coarse tools to fine tools when solving a problem.

18. (Currently Amended) The instrument of claim 11-1, wherein the instrument is housed in an easily portable chassis.

19. (Currently Amended) An integrated digital television (DTV) test instrument comprising:

a video display device (VDD);

DTV circuitry (AV) to receive a DTV signal, to reconstruct at least one of a video stream and an audio stream from said DTV signal; and

a controller to perform at least one of

monitoring functionality, upon an output of said DTV circuitry, that monitors digital properties of a live DTV signal, and

analysis circuitry, upon said output of said DTV circuitry, analyzes digital properties of a recorded DTV signal;

said controller being operable to display pointing-device-clickable buttons on said VDD representing said monitoring functionalities and said analysis functionalities,

wherein said buttons are arranged on said VDD in order of a coarsest level of information granularity to a finest level of information granularity such that the arrangement takes advantage of a user's tendency to progress from using coarse tools to fine tools when solving a problem.

20. (Original) The instrument of claim 19, wherein said controller is embodied by a processor running software.

21. (Canceled)

22. (Currently Amended) For an integrated digital television (DTV) diagnostic instrument having at least one of a video display device (VDD) and an audio display device (AudDD), the instrument further having DTV circuitry (AV) to receive a DTV signal, to reconstruct at least one of a video stream and an audio stream from said DTV signal, and to display at least one of said video stream and said audio stream on said VDD or said AudDD, respectively, and the instrument further having a programmable processor,

a processor-readable article of manufacture having embodied thereon software comprising:

a plurality of code segments including at least one of

a first segment to monitor to digital properties of a live DTV signal from said DTV circuitry, and

a second code segment to analyze digital properties of a recorded DTV signal; and

a third code segment to display pointing-device-clickable buttons on said VDD representing the monitoring functionalities and the analysis functionalities,

wherein said third code segment is operable to arrange said buttons on said VDD in order of a coarsest level of information granularity to a finest level of information granularity such that the arrangement takes advantage of a

user's tendency to progress from using coarse tools to fine tools when solving a problem.

23-24. (Canceled)

25. (New) An integrated digital television (DTV) diagnostic instrument comprising:

at least one of a video display device (VDD) and an audio display device (AudDD);

DTV circuitry to receive a DTV signal, to reconstruct at least one of a video stream and an audio stream from said DTV signal, and to display at least one of said video stream and said audio stream on said VDD or said AudDD, respectively; and

at least one of

monitoring circuitry, responsive to said DTV circuitry, to monitor digital properties of a live DTV signal, and

analysis circuitry, responsive to said DTV circuitry, to analyze digital properties of a recorded DTV signal,

wherein said analysis circuitry is operable upon a recorded output of said DTV circuitry to do at least one of:

drill down into the contents of individual MPEG-2 transport packets, and



present a visualization of the individual MPEG-2 transport packets in the broadcast stream.

26. (New) An integrated digital television (DTV) diagnostic instrument comprising:

at least one of a video display device (VDD) and an audio display device (AudDD);

DTV circuitry (AV) to receive a DTV signal, to reconstruct at least one of a video stream and an audio stream from said DTV signal, and to display at least one of said video stream and said audio stream on said VDD or said AudDD, respectively;

at least one of

monitoring circuitry (M), responsive to said DTV circuitry, to monitor digital properties of a live DTV signal, and

analysis circuitry (AN), responsive to said DTV circuitry, to analyze digital properties of a recorded DTV signal; and

quantitative circuitry (VSB) to quantitatively monitor at least one metric of the quality of a live DTV signal,

wherein said VSB is operable to display at least one of a first graph of a carrier to noise ratio of said DTV signal at an input to a vestigial side band (VSB) decoder, a second graph of a packet error count and a plot of equalizer tap coefficients.

27. (New) An integrated digital television (DTV) diagnostic instrument comprising:

at least one of a video display device (VDD) and an audio display device (AudDD);

DTV circuitry (AV) to receive a DTV signal, to reconstruct at least one of a video stream and an audio stream from said DTV signal, and to display at least one of said video stream and said audio stream on said VDD or said AudDD, respectively;

at least one of

monitoring circuitry (M), responsive to said DTV circuitry, to monitor digital properties of a live DTV signal, and

analysis circuitry (AN), responsive to said DTV circuitry, to analyze digital properties of a recorded DTV signal; and

a controller operable to display pointing-device-clickable buttons on said VDD that are used to invoke functionalities of said monitoring circuitry and said analysis circuitry,

wherein said buttons are arranged on said VDD in order of a coarsest level of information granularity to a finest level of information granularity such that the arrangement takes advantage of a user's tendency to progress from using coarse tools to fine tools when solving a problem.

28. (New) The instrument of claim 11, wherein said analysis component further performs at least one of the following:

generating alarms upon occurrences of errors and upon exceeding specified thresholds; and

triggering a recording upon occurrences of errors and upon exceeding specified thresholds.